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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,851	06/14/2005	Henry Andersson	0365-0630PUS1	5747
2292 7590 01/16/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER DUONG, DIEU HIEN	
			ART UNIT 2821	PAPER NUMBER
			NOTIFICATION DATE 01/16/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

## Office Action Summary

Application No.

10/538,851

Applicant(s)

ANDERSSON ET AL.

Examiner

Dieu Hien T. Duong

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 06/14/05, 09/14/05.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Status of Application***

1. This Office Action is a response to Applicants' Preliminary Amendment filed on 12/06/05. In virtue of this Preliminary Amendment, claims 1-20 are currently presented in the instant application.

### ***Inventorship***

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

### ***Priority***

3. Acknowledgement is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

### ***Information Disclosure Statement***

4. The information disclosure statements (IDS) submitted on 06/14/05 and 09/14/05 in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is considered by the examiner.

If applicant is aware of any prior art or any other co-pending application not already of record, he/she is reminded of his/her duty under 37 CFR 1.97 to disclose the same.

***Abstract***

5. The abstract of the disclosure is objected to because the abstract is exceeded 150 words in length.

Correction is required. See MPEP § 608.01(b).

***Drawings***

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "the phase differences and the rotation position of the antenna field" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

7. The disclosure is objected to because of the following informalities:

In page 1 of specification, after the title, the paragraph - This application is a National Stage application of PCT application No. PCT/FI03/00963 filed 12/16/2003- - should be inserted.

Appropriate correction is required.

***Claim Objections***

8. Claims 1-2 and 12-13 are objected to because of the following informalities:

Claim 1:

Line 4, "which" should be changed to - the at least two antenna arrays- -;

Line 8, "which" should be changed to - the at least two antenna arrays- -;

Line 12, "which element" should be changed to - the third antenna element- -;

Line 15, "first and second antenna groups" should be changed to - the first and second antenna groups- -;

Line 16, "antenna field" should be changed to - the antenna field- -;

Claim 2:

Line 1, "third antenna" should be changed to - third antenna element- -;

Claim 12:

Line 2, "which method" should be changed to - -the method comprises- -;

Line 6, "which" should be changed to - -the at least two antenna arrays- -;

Line 11, "which" should be changed to - -the at least two antenna arrays- -

;

Line 13, "which element" should be changed to - -the third antenna element- -;

Line 16, "first and second antenna groups" should be changed to - -the first and second antenna groups- -;

Line 17, "antenna field" should be changed to - -the antenna field- -;

Claim 13:

Line 1, "third antenna" should be changed to - -third antenna element- -;

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1:

In lines 5-6, the recitation "the phase differences between the antenna arrays and the rotation position of the antenna field" is unclear. It is clear since

the recitation “the phase differences between the antenna arrays and the rotation position of the antenna field” does have any explanation either in the specification or drawing. Also, it is not clear how the phase differences between the antenna arrays and the rotation position of the antenna field since they are on the same plane.

In line 5, there is insufficient antecedent basis for the limitation “the phase differences” in the claim.

In line 6, there is insufficient antecedent basis for the limitation “the antenna field” in the claim.

In line 9, there is insufficient antecedent basis for the limitation “the phase difference” in the claim.

In line 11, there is insufficient antecedent basis for the limitation “the telemetry signal” in the claim.

Regarding claim 4:

In lines 2-3, there is insufficient antecedent basis for the limitation “the ground reflection” in the claim.

Regarding claim 7:

In lines 2-3, the recitation “the system comprises at least three antenna fields” is unclear. It is not clear since the “antenna field” is already defined in claim 1 and the at least three antenna fields of claim 7 is including or not including the “antenna field” of claim 1.

Regarding claim 8:

In line 2-3, there is insufficient antecedent basis for the limitation "the ground reflection" in the claim.

Deficiencies are found in claims 12, 14, 18 and 19 which require the same corrections.

Claims 2-3, 5-6, 9-11, 13, 15-17 and 20 are rejected since they are dependent on indefinite claims 1 and 12.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-6, 10-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Hippelainen (US 5,053,784, cited by applicants).

Regarding claim 1, as best understood, Hippelainen discloses, in Figures 1-3, an antenna system for measuring azimuth and elevation angles of an active signal sending radiosonde which antenna system comprises a first passive antenna group (6) comprising at least two antenna arrays, the direction pattern of the at least two antenna arrays is wide at least in elevation plane for measuring azimuth angle of the radiosonde based on the difference between the antenna arrays and the rotational position of the antenna field, a second passive antenna group (5) comprising at least two antenna arrays, the direction pattern of which is wide at least in elevation plane for measuring the elevation angle of the radiosonde based on the phase differences between the



antenna arrays, and at least one third antenna element (4) having high gain for receiving the telemetry signal, the direction pattern of which element is narrow in azimuth plane and wide in elevation plane, characterized in that the first and second antenna groups form the solid antenna field, and the antenna field is fixedly tilted in a predetermined elevation position.

Regarding claim 2, as applied to claim 1, Hippelainen discloses, in Figures 1-3, characterized in that the third antenna element (4) belongs to the antenna field.

Regarding claim 3, as applied to claim 1, Hippelainen discloses, in Figure 1-3, wherein the antenna field is essentially planar.

Regarding claim 4, as applied to claim 1, Hippelainen discloses, in Figures 1-3, wherein the gain pattern of each antenna array (5, 6) is aligned to the direction of a ground reflection (1).

Regarding claim 5, as applied to claim 1, Hippelainen discloses, in Figure 5, wherein the antenna system comprises means for rotating the antenna field around vertical axis approximately to the direction of the radiosonde while the elevation angle remains essentially constant.

Regarding claim 6, as applied to claim 1, Hippelainen discloses, in col. 8, lines 33-40, wherein the radiosonde telemetry reception is independent of azimuth and elevation measurements.

Regarding claim 10, as applied to claim 1, Hippelainen discloses, in Figures 1-3, wherein the antenna field is fixedly tilted backwards.

Regarding claim 11, as applied to claim 10, Hippelainen discloses, in col. 5, lines 65-68, wherein the antenna forms an inverted letter T.

Claims 12-17 are rejected for similar subject matter to claims 1-2, 4-6 and 10.

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 7-9 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hippelainen (US 5,053,784) in view of Chethik (US 5,543,811, cited by applicants).

Regarding claims 7 and 18, Hippelainen discloses every feature of claimed invention as expressly recited in claims 1 and 12, except for the antenna field is fixed in elevation and azimuth direction, and that the system comprises at least three antenna fields pointing to different azimuth directions.

Chethik discloses, in Figure 1, the antenna field being fixed in elevation and azimuth direction, and that the system comprises at least three antenna fields pointing to different azimuth directions.

It would have obvious to one having ordinary skill in the art at the time the invention was made to modify Hippelainen's antenna system having at least three antenna fields pointing to different azimuth directions as taught by Chethik, doing so would provide a improved phased array antenna whose design enables the achievement of a gain characteristic that does not fall below a predetermined threshold

for all beam angles from zenith to a critical minimum elevation angle (col. 2, lines 40-45).

Regarding claims 8-9 and 19-20, as applied to claims 7 and 18, Chethik discloses, in Figure 1, the gain pattern minimum (null) of each antenna array is aligned to the direction of a ground reflection; radiosonde telemetry reception is independent of azimuth and elevation measurements.

### ***Inquiry***

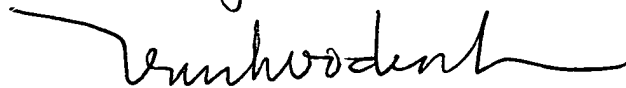
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu Hien T. Duong whose telephone number is 571-272-8980. The examiner can normally be reached on Monday - Friday, from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

01/03/07  
DD  
Art Unit 2821

Primary Examiner



TRINH VO DINH